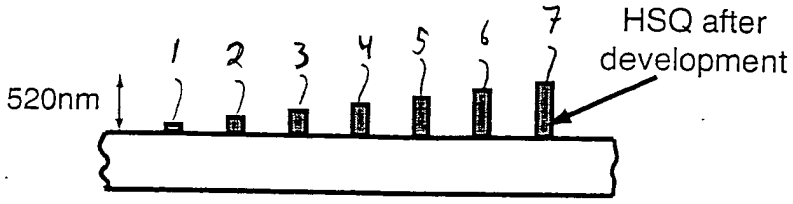

FIG 1

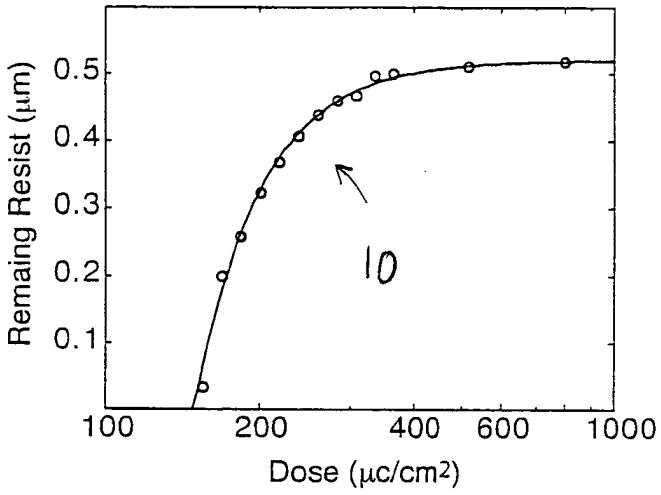

FIG. 2

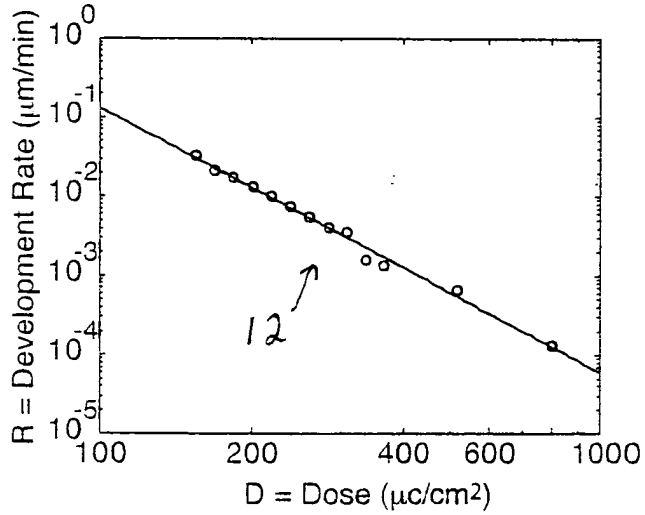

FIG. 3

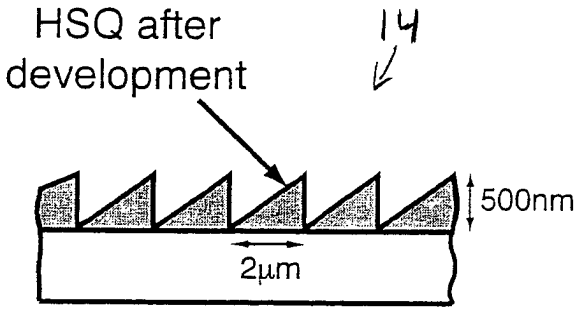
HSQ after
development
14
500nm
2μm

FIG.4

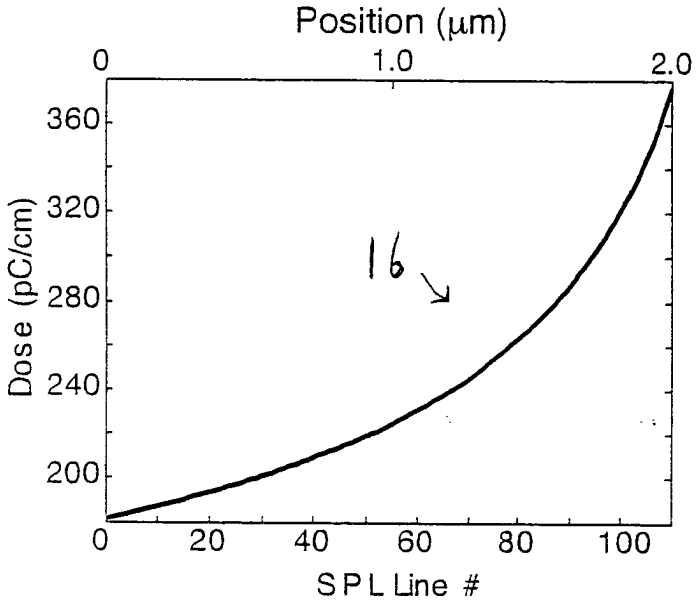
Position (μm)
0
1.0
2.0
360
320
280
240
200
Dose (pC/cm)
16
0
20
40
60
80
100
SPL Line #

FIG.5

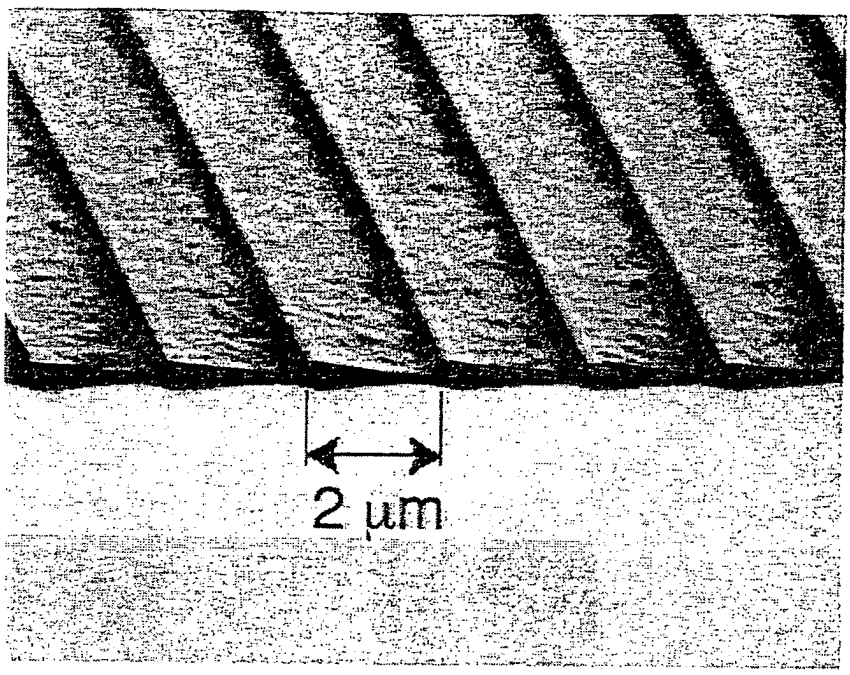

FIG. 6A

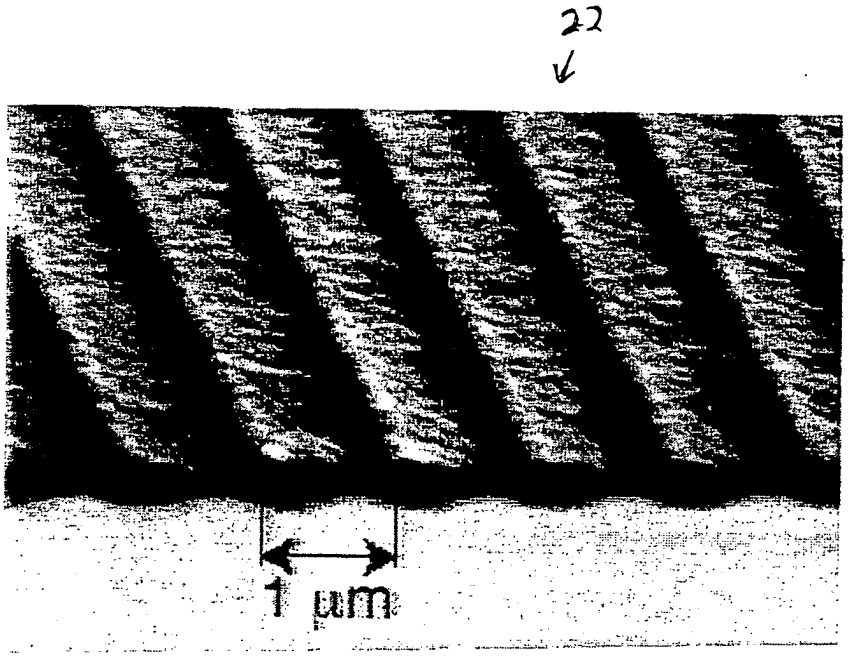

FIG. 6B

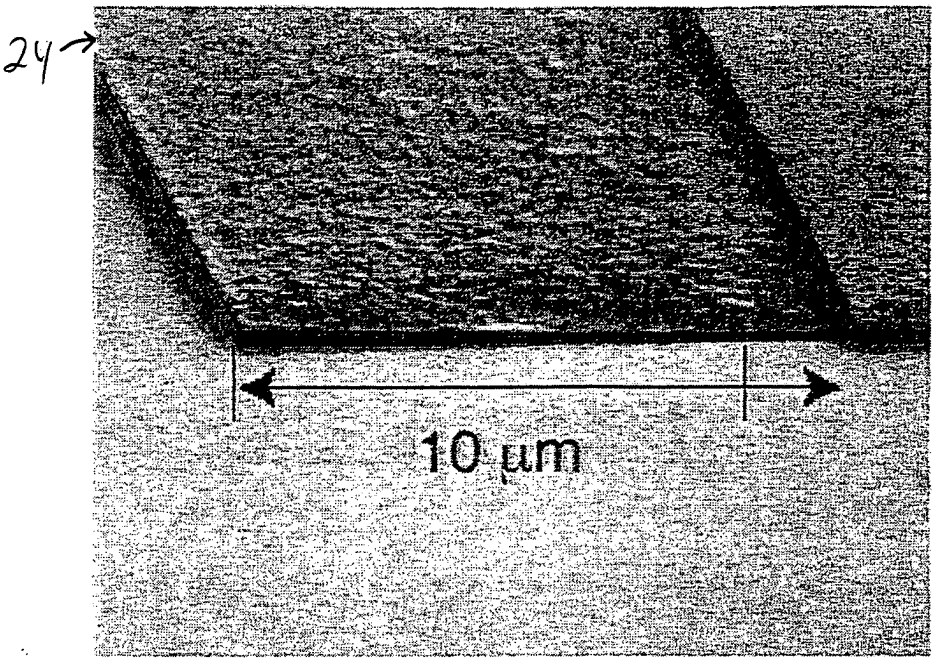

FIG. 6C

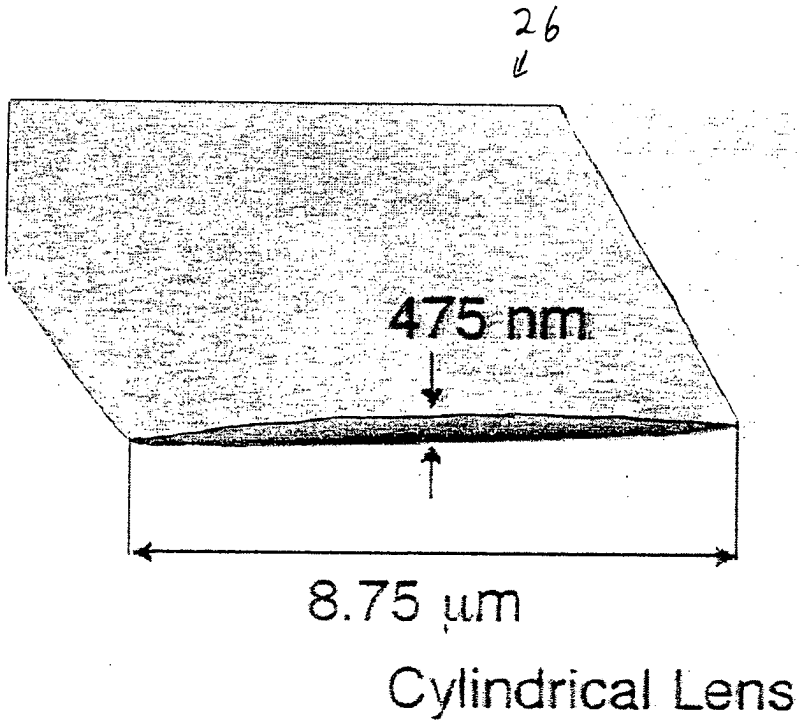

FIG. 6D

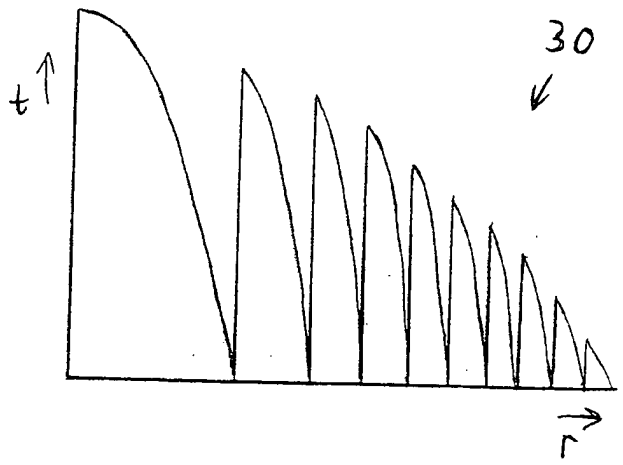

FIG. 7A

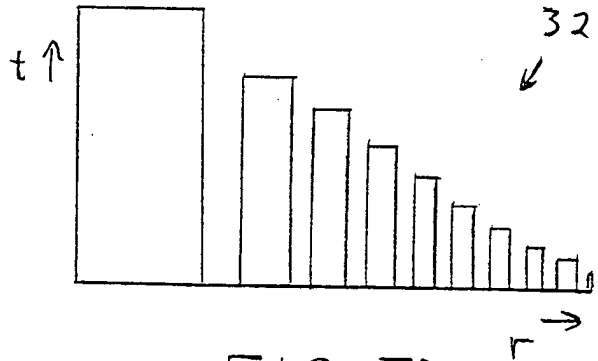

FIG. 7B

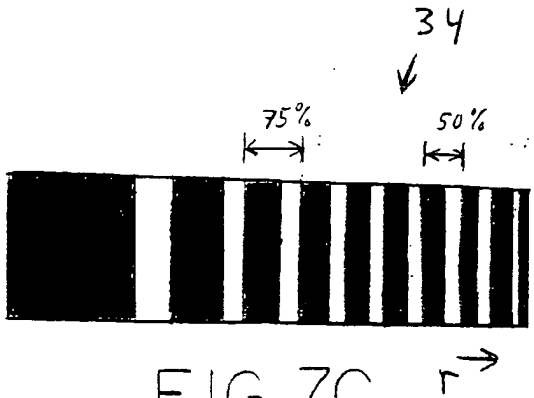

FIG. 7C

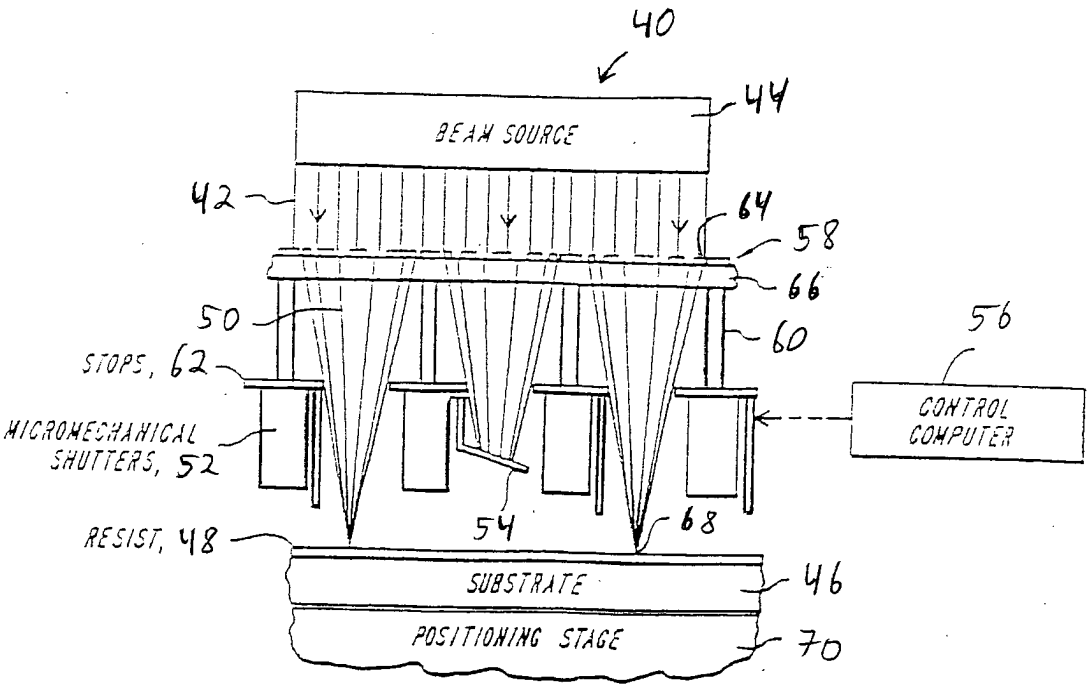
40
44
BEAM SOURCE
42
64
58
66
50
60
56
STOPS, 62
CONTROL COMPUTER
MICROMECHANICAL SHUTTERS, 52
54
68
RESIST, 48
SUBSTRATE
46
POSITIONING STAGE
70

FIG. 8

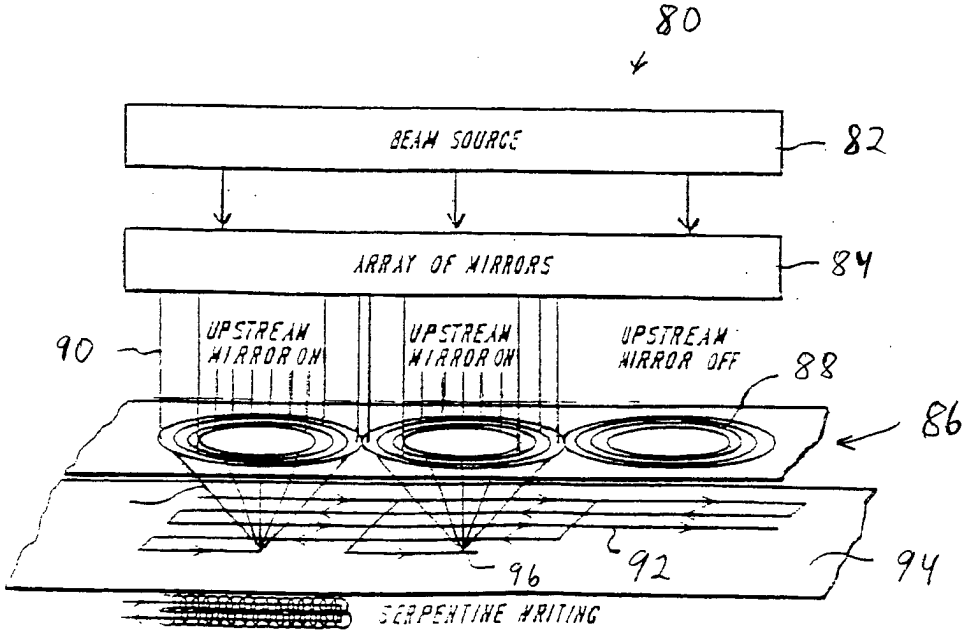
80
BEAM SOURCE
82
ARRAY OF MIRRORS
84
UPSTREAM MIRROR ON
UPSTREAM MIRROR ON
UPSTREAM MIRROR OFF
90
88
86
96
92
94
SERPENTINE WRITING

FIG. 9

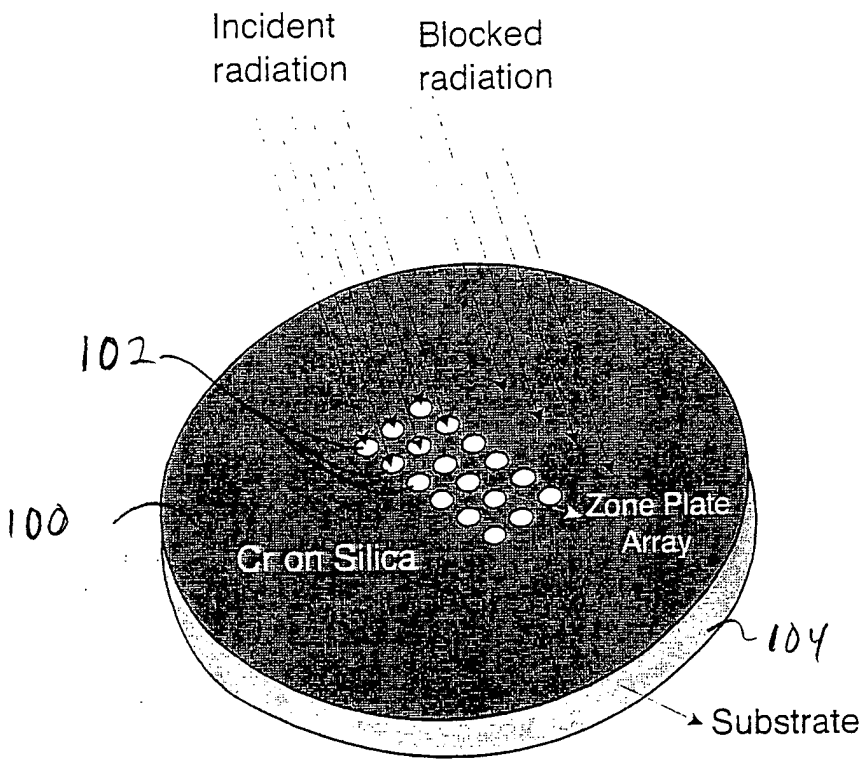
Incident radiation
Blocked radiation
102
100
Zone Plate Array
Cr on Silica
104
Substrate

FIG.10

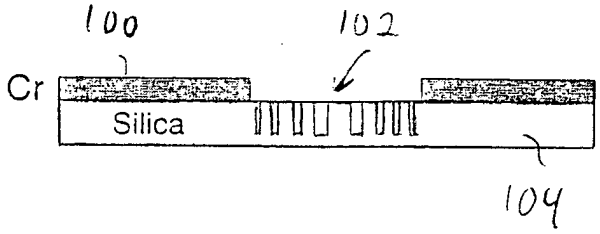
100
102
Cr
Silica
104

FIG.11

FIG.12A

FIG.12B

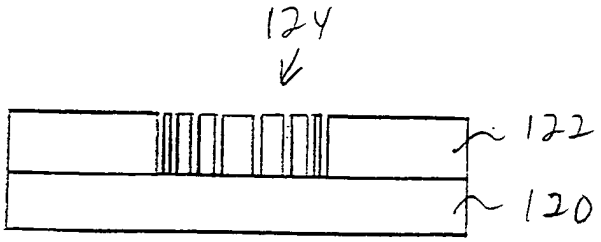

FIG.12C

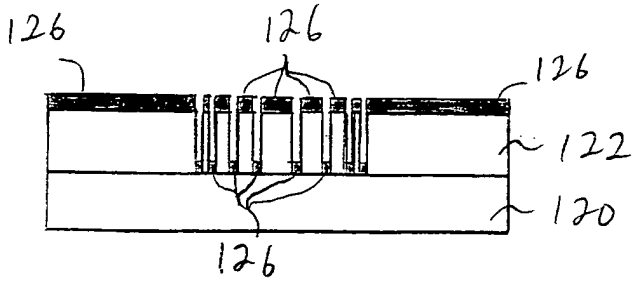

FIG.12D

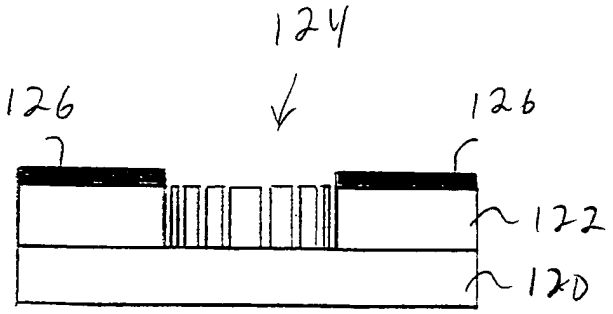

FIG.12E

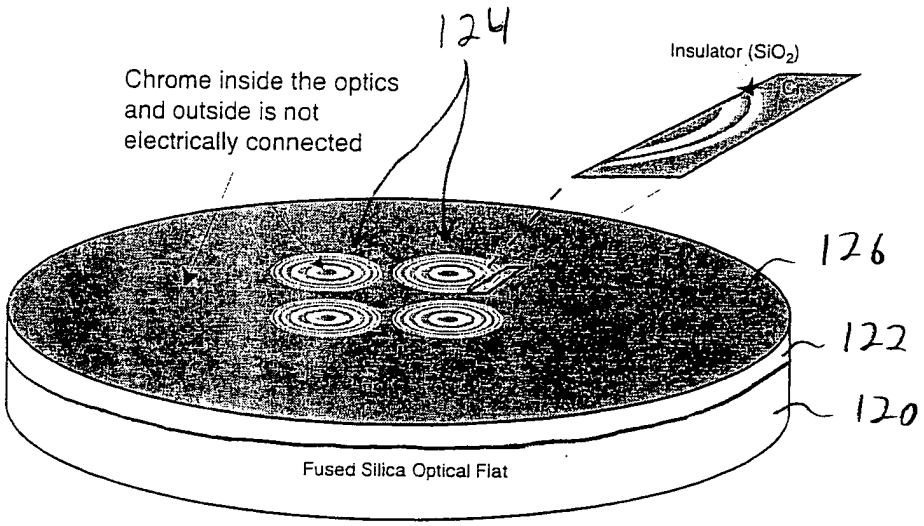
124
Chrome inside the optics
and outside is not
electrically connected
Insulator (SiO_2)
Cr
126
122
120
Fused Silica Optical Flat

FIG. 13

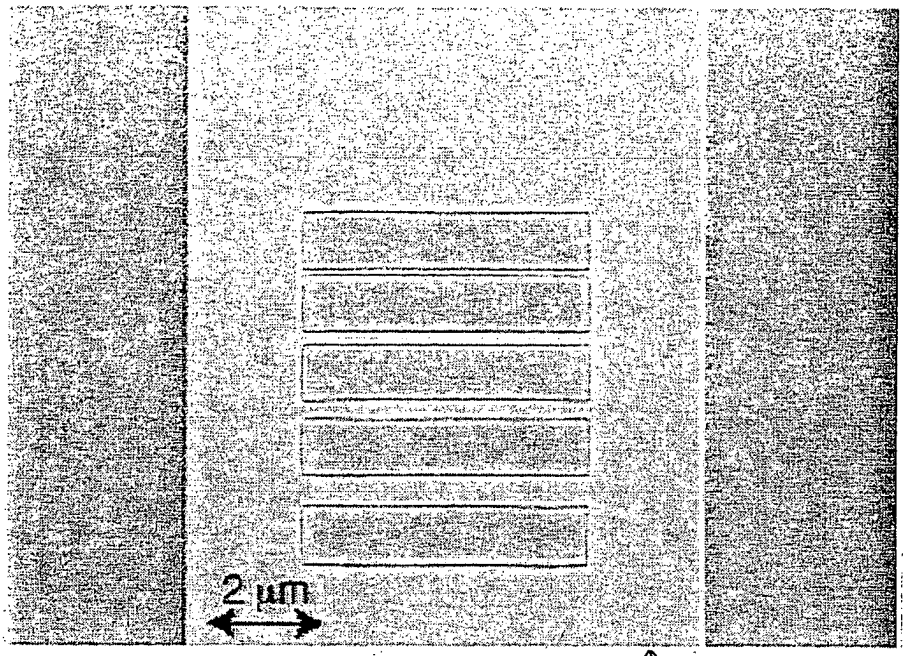

FIG. 14A

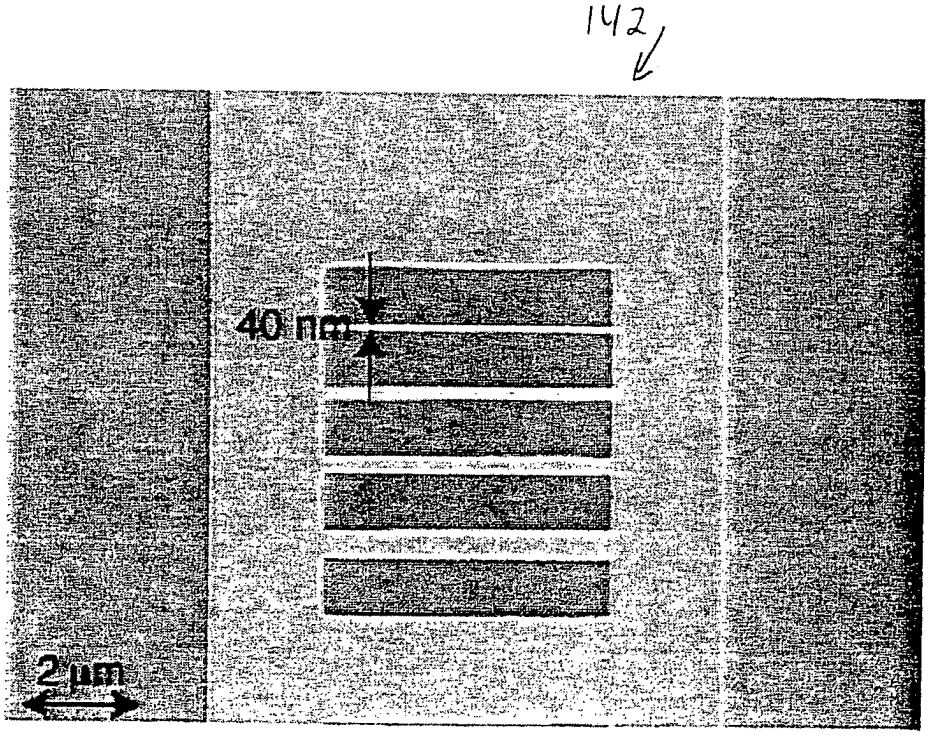

FIG. 14B

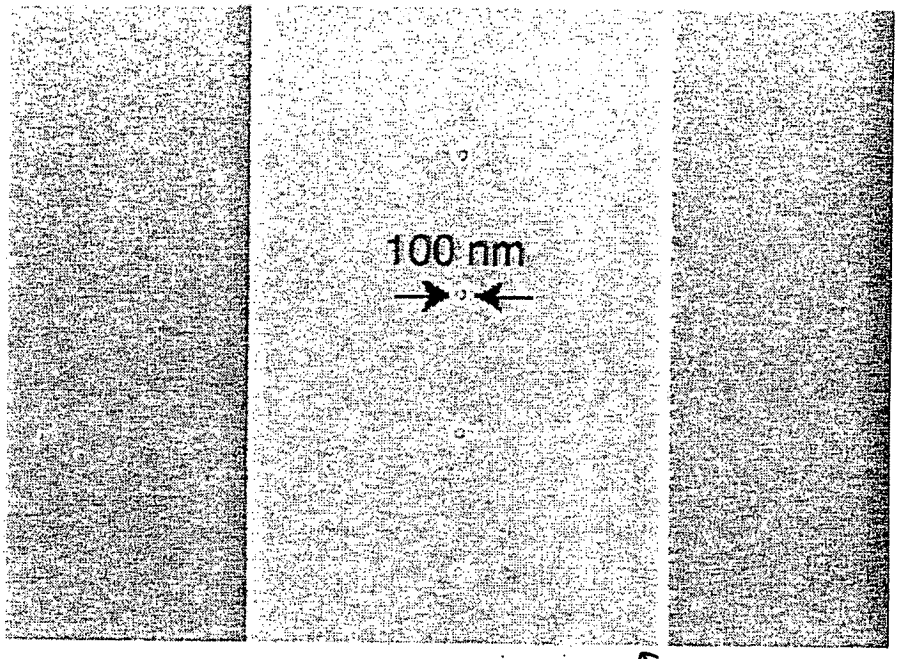

FIG.14C

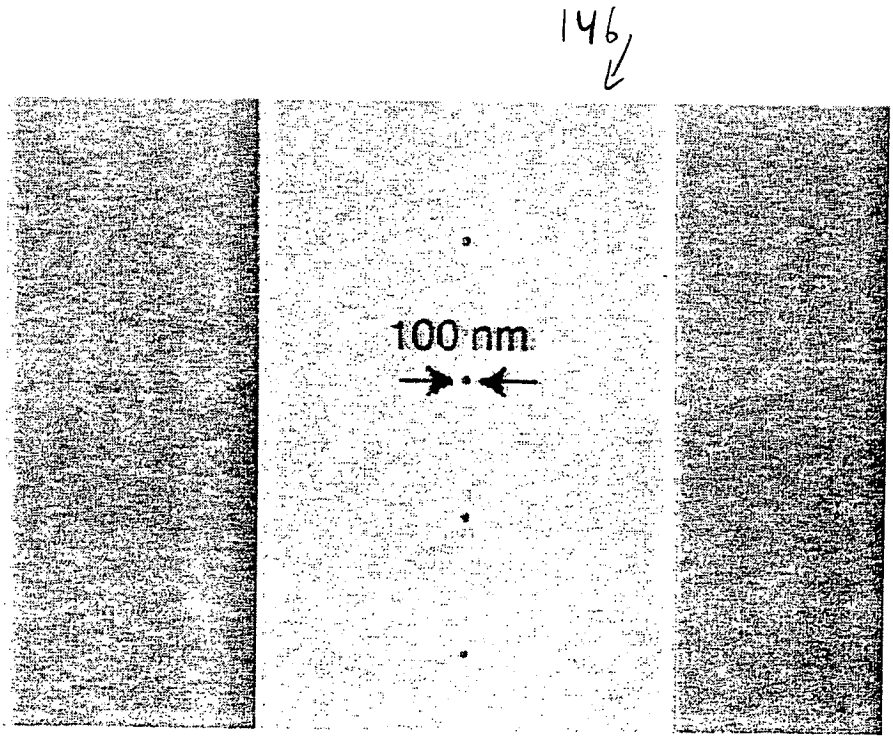

FIG.14D

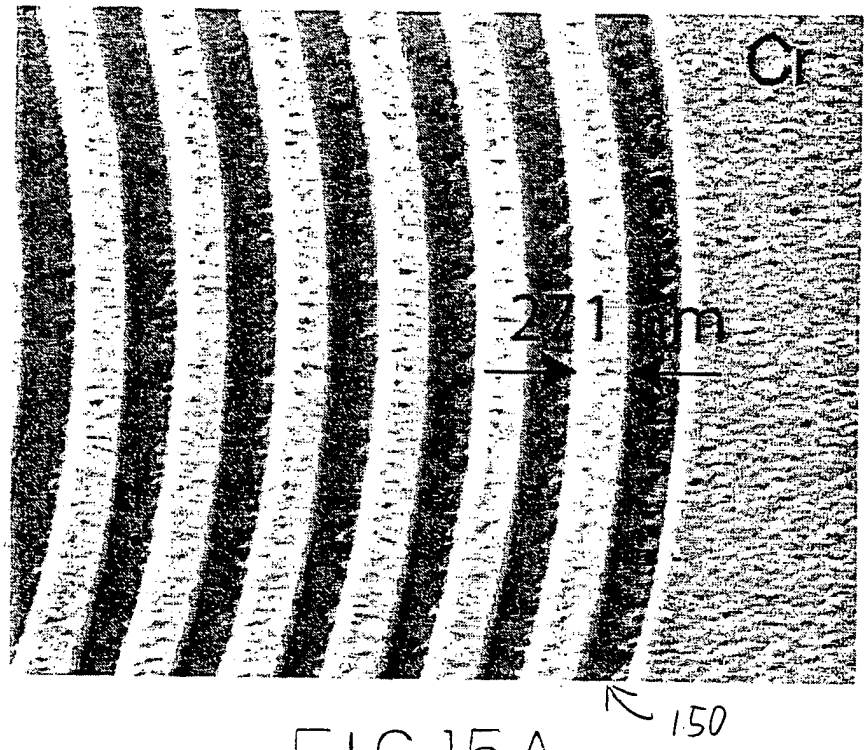

FIG.15A

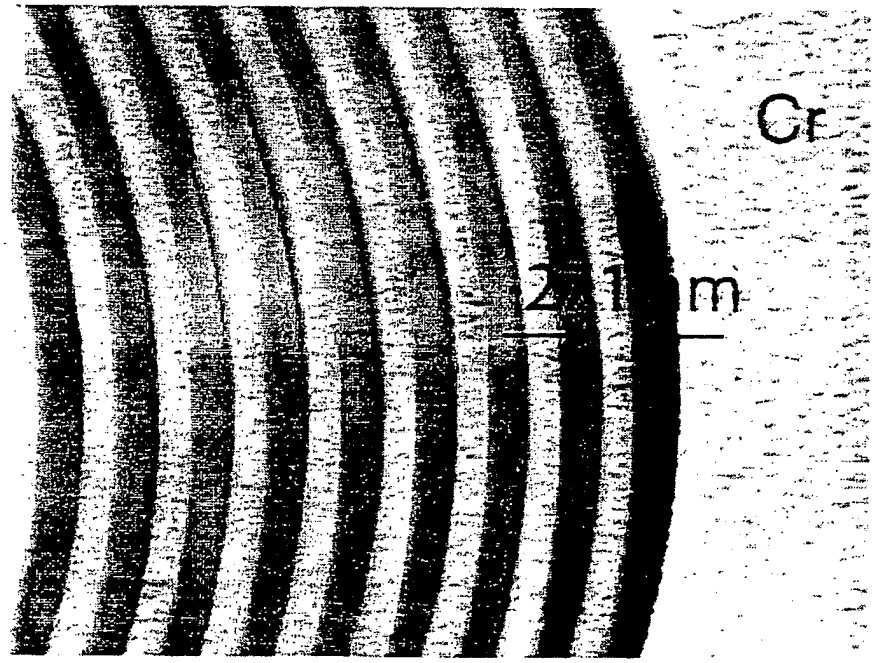

FIG15B